

Amendments to the Claims

1 1. (original) A method of making a solid propellant for
2 rocket drives from cryogenic monergole systems cooled below room
3 temperature and especially a heterogeneous liquid-solid propellant
4 in which at least one of the reactants is an oxidizer or fuel which
5 contains liquid or gas phase at standard temperature, for example,
6 emulsions of liquid components which are not soluble in one an-
7 other, suspensions of solid components in liquid components or
8 liquid impregnated bulk materials or packings, characterized in
9 that at least one liquid or gaseous phase as a reactant in the form
10 of a fuel or oxidizer is incorporated in a solid phase in a struc-
11 ture containing hollow spaces and with a complementary reactant and
12 the liquid or gaseous phase is transformed by freezing into the
13 cryogenic solid phase below standard temperature within the solid
14 structure.

1 2. (original) The method according to claim 1 charac-
2 terized in that as the solid structure an open pore foam and
3 especially a foam of plastic and/or metal foam, for example a
4 polyethylene foam, a polyurethane foam, a HTBP foam, a GAP foam, an
5 aluminum foam, a magnesium foam or a beryllium foam is used.

1 3. (original) The method according to claim 2 charac-
2 terized in that as the solid structure a packing which is incorpo-
3

3 rated in a casting material and is composed of a polyethylene,
4 polyurethane, HTPB, GAP, AP, aluminum, magnesium or beryllium or
5 other mixtures is used.

1 4. (currently amended) The method according to ~~claims 1~~
2 ~~to 3~~ characterized in that claim 1 wherein the liquid phase is
3 incorporated in the solid structure by immersion and/or impregna-
4 tion thereof.

1 5. (original) The method according to claim 1 charac-
2 terized in that as the liquid or gaseous phase, oxygen, hydrocar-
3 bons, hydrogen peroxide or an HEDM propellant is used.

1 6. (original) The method according to claim 1 charac-
2 terized in that the solid structure is produced by freezing liquid
3 fuel or oxidizer, especially oxygen, hydrocarbons, hydrogen perox-
4 ide or an HEDM propellant.

1 7. (currently amended) The method according to ~~claims 1~~
2 ~~and claim 6~~ characterized in that wherein the liquid phase is
3 initially encapsulated, then mixed with the solid structure and
4 bonded with the binder.

1 8. (currently amended) The method according to ~~claims 1~~
2 ~~and claim 6~~ characterized in that wherein the liquid phase is

3 encapsulated and before freezing the solid structure is mixed with
4 it and both then frozen together.

1 9. (currently amended) The method according ~~one of the~~
2 ~~preceding claims characterized in that~~ claim 1 wherein the combus-
3 tion speed is adjusted by the selection of a special hollow space
4 size in the solid structure.

1 10. (original) A solid propellant for rocket drives
2 cooled below room temperature, especially a heterogeneous quasi-
3 mechanical fuel-oxidizer combination in which at least one of the
4 reactants is a liquid or gaseous phase at standard temperature, for
5 example, an emulsion of liquid components which are not soluble in
6 one another, a suspension of a solid component in a liquid compo-
7 nent or a liquid impregnated packing, characterized in that at
8 least one of the reactants is contained in a stable state by
9 cooling to form a solid and at least one of the reactants is a
10 solid phase which is coherent and combined with the other via a
11 pore structure.

1 11. (original) The solid propellant according to claim
2 10 characterized in that the solid phase is comprised of a plastic
3 foam, especially PUR, PE, HTPB or GAP foam, a metal foam for
4 example aluminum, magnesium or beryllium or a mixture thereof.

1 12. (original) The solid propellant according to claim
2 10 characterized in that the solid phase is comprised of a stable
3 solid.

1 13. (original) The solid propellant according to claim
2 10 characterized in that the solid is comprised of a substance
3 which is transformed by cooling into the stable state and from
4 oxygen, hydrocarbons, hydrogen peroxide or an HEDM propellant.

1 14. (currently amended) The solid propellant ~~according~~
2 ~~to one of the preceding claims 10 to 13 characterized in that to~~
3 claim 13 wherein the solid phase is comprised of a packing of
4 optionally shaped individual pieces whose hollow spaces are con-
5 nected together and in which a frozen liquid is contained as a
6 reactant.

1 15. (original) The solid propellant according to claim
2 14 characterized in that the frozen reactant is not in homogeneous
3 form but itself is a packing which is mixed into the hollow space
4 of the first packing.

1 16. (currently amended) The propellant according to ~~one~~
2 ~~of the preceding claims 10 to 15 characterized in that claim 10~~
3 wherein the solid phase is provided with a protecting coating which
4 chemically insulates the two reactants from one another.